

REMARKS

Applicant appreciates the Examiner's thorough consideration provided the present application. Claims 1-15 and 18-21 are now present in the application. Claims 1, 8, 13 and 20 have been amended. Claims 1, 8, 13 and 20 are independent. Reconsideration of this application is respectfully requested.

Claim Rejections Under 35 U.S.C. § 101

Claims 1-21 [sic., 1-15 and 18-21] stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. This rejection is respectfully traversed.

In light of the foregoing amendments, Applicant respectfully submits that this rejection has been obviated and/or rendered moot. Without conceding to the propriety of the Examiner's rejection, but merely to timely advance the prosecution of the application, as the Examiner will note, independent claims 1, 8, 13 and 20 have been amended to recite "a plurality of different input vectors of auditory modality and visual modality are handled simultaneously and independently by the neurons *to perform auditory and visual recognition.*"

Since claims 1-15 and 18-21 are directed to at least one practical application within the technological arts (*i.e., performing the auditory and visual recognition*) to produce a useful, concrete and tangible result (*i.e., the auditory and visual recognition*), claims 1-15 and 18-21 are directed to at least one practical application of a 35 U.S.C. § 101 judicial exception. Therefore, it is believed that claims 1-15 and 18-21 are directed to statutory subject matter. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-15 and 18-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gurney, "An Introduction to Neural Networks", in view of Hatayama, U.S. Patent No. 6,219,657. This rejection is respectfully traversed.

Independent claims 1, 8, 13 and 20 have been amended to recite a combination of elements including "each of the neurons ... has a plurality of modalities different from one another" and "the plurality of modalities of the neurons including auditory modality and visual modality so that a plurality of different input vectors of auditory modality and visual modality are handled simultaneously and independently by the neurons to perform auditory and visual recognition." Applicant respectfully submits that the above combination of elements as set forth in independent claims 1, 8, 13 and 20 is not disclosed nor suggested by the references relied on by the Examiner.

Applicant respectfully submits that, in the present invention, the neurons in the neural network unit have a plurality of modalities different from each other. The plurality of modalities of the neurons including auditory modality and visual modality so that a plurality of different input vectors of auditory modality and visual modality are handled simultaneously and independently by the neurons to perform auditory and visual recognition.

The Examiner has correctly acknowledged that Gurney fails to teach "the plurality of modalities of the neurons including auditory modality and visual modality so that a plurality of different input vectors of auditory modality and visual modality can be handled simultaneously and independently by the neurons" as recited in claims 1, 8, 13 and 20. However, the Examiner turned to rely on Hatayama and alleged that Hatayama cures the deficiencies of Gurney.

In particular, the Examiner in the “Response to Applicant’s Arguments” section of the outstanding Office Action stated “any neuron in a neural network can only process data one at a time” and “the only way that data from different sources can be processed at the same time is by inputting them together.” Then the Examiner alleged “[t]herefore, as taught by Hatayama, receiving pieces of information (vectors) from different sources by the neural network will process these vectors of different ‘modalities’ simultaneously.” Applicant respectfully disagrees with the Examiner’s allegation.

More specifically, Hatayama in FIG. 5 discloses that the user information I_0 - I_5 (referred to by the Examiner as the input vectors) is entered into the input detection information processing block 51. However, as shown in FIG. 6 of Hatayama, the input type discrimination step S101 has to be performed first by the input detection information processing block 51 before the subsequent step (such as S102-S106) is performed. In other words, the input detection information processing block 51 has to determine what type of an input piece of user information is (such as voice input, picture input, sensor input, etc) in order to further process this piece of user information. After the type of this piece of user information is determined, a corresponding one of the decision steps (S102-S106) is performed to generate the processed information for this piece of user information. Therefore, when several pieces of user information from different sources 1-5 are to be processed, the input detection information processing block 51 can *process only one piece of user information at a time*. In other words, several pieces of user information from different sources 1-5 *cannot be processed at the same time* as the Examiner alleged. Therefore, Hatayama still fails to teach “each of the neurons ... has a plurality of modalities different from one another” and “the plurality of modalities of the neurons including auditory

modality and visual modality so that *a plurality of different input vectors of auditory modality and visual modality are handled simultaneously* and independently by the neurons to perform auditory and visual recognition” as set forth in independent claims 1, 8, 13 and 20.

Accordingly, neither of the references utilized by the Examiner individually or in combination teaches or suggests the limitations of independent claims 1, 8, 13 and 20 or their dependent claims. Therefore, Applicant respectfully submits that claims 1, 8, 13 and 20 and their dependent claims clearly define over the teachings of the references relied on by the Examiner. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but merely to show the state of the prior art, no further comments are necessary with respect thereto.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Cheng-Kang (Greg) Hsu, Registration No. 61,007 at (703) 205-8000 in the Washington, D.C. area.

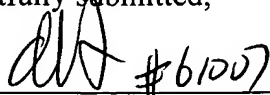
Application No. 10/806,090
Amendment dated August 19, 2008
Reply to Office Action of April 22, 2008

Docket No.: 0051-0221PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: August 19, 2008

Respectfully submitted,

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